

United States Patent [19]
Oberg

[11] **Patent Number:** 5,270,690
[45] **Date of Patent:** Dec. 14, 1993

[54] **BIDIMENSIONAL INPUT CONTROL SYSTEM**

[75] Inventor: **Arthur E. Oberg**, Anaheim, Calif.

[73] Assignee: **Harold C. Avila**, Riverside, Calif.

[21] Appl. No.: 614,362

[22] Filed: Nov. 16, 1990

Related U.S. Application Data

[63] Continuation of Ser. No. 348,916, May 8, 1989, abandoned.

[51] Int. Cl.⁵ G09G 3/02

[52] U.S. Cl. 345/163; 74/471 XY;
345/184

[58] **Field of Search** 340/706, 709, 710;
74/471 XY, 471 R, 504, 89.22; 338/29, 31, 74,
79, 157, 160; 200/567, 252, 260, 38 CA

[56] References Cited

U.S. PATENT DOCUMENTS

3,643,148	2/1972	Brown et al.	74/471 XY
4,369,439	1/1983	Broos	340/706
4,692,756	9/1987	Clark	340/706
4,712,101	12/1987	Culver	74/471
4,724,715	2/1988	Culver	74/471 R
4,799,049	1/1989	Avila	340/710
4,823,634	4/1989	Culver	340/706
4,928,093	5/1990	Rahman	74/471 XY

FOREIGN PATENT DOCUMENTS

5586428 1/1982 Japan .

2076602 5/1981 United Kingdom .

Primary Examiner—Alvin E. Oberley

Assistant Examiner—Amare Mengistu

Attorney, Agent, or Firm—Morland C. Fischer

[57] **ABSTRACT**

A manually activated bidimensional, boundaryless input control system having particular application to a computer to enable the computer operator to selectively and accurately control the positioning of a video image (e.g. a cursor) on a computer monitor. The input system comprises a contact bar which is located near the front of the computer keyboard so as to be readily accessible to the computer operator for rotation around a fixed axis. The contact bar carries a plurality of evenly spaced, longitudinally extending belts which may be rotated by the computer operator in a longitudinal direction around the bar. Movement sensing devices are interfaced with and responsive to both the rotation of the bar and at least one of the belts extending longitudinally therealong. The movement sensing devices are connected with electronic signal generators which are adapted to provide output signals to the computer for controlling the movement of the cursor up or down and left or right corresponding to the movements of the rotatable bar and the belts carried thereby.

27 Claims, 8 Drawing Sheets

